CHAPTER I

INTRODUCTION

1.1 Background

Indonesia is the third largest of tropical rainforest country in the world and also one of the countries having the greatest flora and fauna richness (The REDD Desk, 2013). According to Ministry of Environment and Forestry data, Table 1 below illustrates the total area of each types of forest in Indonesia in 2014. From the table, almost 60 percent of the forest area is functioned as a permanent production forest, limited production forest, and convertible production forest. Meantime, the rest is functioned as wildlife reserves, nature conservation areas and protected forest (Ministry of Environment and Forestry, 2015).

Table 1 Total Forest Area Based on Its Function in Indonesia

No	Forest Functions	Total Area (Million Ha)
1	Wildlife Reserves and Nature Conservation Areas	22.057,9
2	Protected Forest	30.388,4
3	Permanent Production Forest	27.907,8
4	Limited Production Forest	30.168,2
5	Convertible Production Forest	17.863,4
Jumlah		128.385,8

Source: Ministry of Environment and Forestry (2015, p.77-78)

Moreover, forest has a considerable amount of benefits for human survival, both economically and ecologically. In term of economic benefits, forest produces not only timber but also non timber products, such as rattan, *gondorukem*, fruits, silk, honey, and bamboo. Meanwhile, ecologically, forest has important roles as a micro climate and water management controller, soil fertility protector, as well as a source of biodiversity that plays an important role for the existence of human

being today and the future. Globally, forest also has a significant contribution to global warming issue due to its function as a carbon sinks and carbon emitter (Wibowo and Gintings, 2012, p.67).

Ministry of Environment and Forests (2015, p.72) defines forest area as a particular area, which is appointed and stipulated by the government to be maintained its presence as permanent forest. Determination of forest area is important to ensure about the legal status of the areas, and its border that has been appointed as a forest area. In addition, the stipulation is also imperative to maintain the availability and integrity of forest area as the economic driver and a life support for local, national, regional and global societies.

Based on Law No. 41/1999 on Forestry, forest areas are divided into three types consisting of Conservation Forest, Protection Forest and Production Forest. Conservation Forest is a forest area with special characteristics in which the main function is to preserve plant, animals, and ecosystems. Conservation forest consists of wildlife reserves (nature reserves and game reserves); nature conservation areas such as national parks, forest reserves and nature tourism parks; as well as hunting parks. Protected forest is a forest area which the main function is to protect a life support system in term of controlling the water system, preventing floods, controlling erosion, preventing sea water intrusion and maintaining soil fertility. Meanwhile, production forest is a forest area that has the main function to utilize forest yields, both timber forest products and non-timber forest products. Production forest consists of permanent production forest, limited production forest, and convertible production forest.

Economically, forestry sector has a relatively small contribution to gross domestic product (GDP) of Indonesia. Moreover, as described in Table 2, the

contribution tends to decrease, with an average only 0.75% of the Indonesia's GDP from 2010 -2015. However, the forest has a very vital role in Indonesia's economy, due to the its products (wood, rattan, latex, bamboo, etc.) are the main raw materials for advanced processing industries such as panel wood, paper and chemical industries, as well as pharmaceutical and traditional medicine. Indonesia exports those raw materials derived from forest and imports finished goods. Hence, this practice will bring an in-balance income between export and import. At the end, consciously or unconsciously, forest products will effect on national economy growth.

Table 2 Gross Domestic Product (GDP) Based on Constant Prices of Forestry Business and Timber Cutting (in billion Rupiah)

No	Year	GDP Forestry Business and Timber Cutting	Total GDP	Contribution of Forestry Business and Timber Cutting to Total GDP (%)
1	2010	58125,9	6864133,1	0,85
2	2011	58731	7287635,3	0,81
3	2012	58872	7727083,4	0,76
4	2013	59228,8	8156497,8	0,73
5	2014	59573,5	8566271	0,70
6	2015 (*)	59966,2	8976932	0,67

Source: Statistical Centre Agency (2016)[1]

Environmentally, forest has a strategic role as flood and erosion controller. Forest canopy and soil cover vegetation are effective in minimizing the occurrence of surface runoff and soil erosion. The structure of trees root may increase rainwater infiltration into the soil ground and it enables the soil to save more water and to control floods. In addition, strong root has important roles to improve soil stability and to reduce its vulnerability to landslides. On the other hand, forest cover

[1] https://www.bps.go.id/Subjek/view/id/11#subjekViewTab3|accordion-daftar-subjek2 . cited on April, 11th, 2016 on 11.35 am.

can preserve soil nutrient and help in maintaining soil fertility. Besides, forest also has an important role in maintaining air quality and controlling climate change, through its ability to absorb and to emit carbon. According to FWI (2001, p.4), it is estimated that Indonesia's forest vegetation generates more than 14 billion tons of biomass or equivalent to 20 percent of biomass produced by vegetation in all the tropical forests in African region, and storing about 3.5 billion tons of carbon.

A considerable amount of forest benefits has apparently a linear correlation to its destructive level. This can be seen through the high level of deforestation and forest degradation in Indonesia every year which may result in environmental degradation. Framework on Climate Change of the United Nations (United Nations Framework Convention on Climate Change, or UNFCC) Decree No. 11/CP.7 defines deforestation as a direct result of human activities through conversion of forested land to non-forested land. The definition leads to the reduction of canopy cover percentage to be lower than threshold. Meanwhile, degradation is defined as a direct result of human activities that results in forest loss continuously. Degradation leads to a reduction of carbon stocks as a result of human activities and forest cover remaining above the minimum threshold (Masripatin et al, 2010, p.6).

Forest fires, forest encroachment, illegal logging, illegal trading (as an encouragement of a high demand for timber and non-timber products in local, national, and global market), conversion of forest area to other uses (for example agriculture, plantations, settlements, and mining), as well as unsustainable forest harvesting due to the ignorance in implementing sustainable forest management principles, are major causes of deforestation and forest degradation in Indonesia. Because of Indonesia's population is increasing every year, so that the need of

residential area, agriculture, plantation, and mining also rises up. The increasing of land requirements as a result of population increment, decentralization, economic growth and development policies in other sectors such as agriculture, farming, housing, and infrastructure, directly or indirectly leads to a vulnerable condition in term of forest resources and the forest areas degradation. Deforestation rate based on Ministry of Environment and Forestry (2015) data is presented in Table 3 below.

Table 3. Deforestation Rate in Indonesia

No	Forest Functions	Deforestation Rate (Ha/Year)
1	Wildlife Reserves and Nature Conservation Areas	34.391
2	Protected Forest	41.191
3	Permanent Production Forest	105.810
4	Limited Production Forest	118.384
5	Convertible Production Forest	39.701
Jumlah		339.477

Source: Ministry of Environment and Forestry (2015, p.88-92)

Deforestation and forest degradation also significantly increase of carbon emissions in atmosphere. Griffiths (2007, p.6) asserts that deforestation contributes 18 - 20 percent of global greenhouse gas emissions, equal to 42 Giga tons of CO_2 per year, and 75 per cent of the total emission comes from deforestation in developing countries. Meantime, peat land area which only covers less than three percent of world's land area is predicted to be able to store about 550 Giga Ton C, or the equivalent to the twice of world's forests carbon storage (Wibowo dan Gintings 2012, p.70).

Forest and land fire in Indonesia apparently has a significant role in boosting deforestation and degradation rate in Indonesia. Simultaneously, it is predicted that the damage is worse than illegal logging activities. Furthermore, forest fires in Indonesia has been occurring since the era of Dutch East Indies government

proven by the regulations about forest fires, including Forest Ordinance for Java and Madura issued by the Dutch government in 1927. Then, post-independence era, forest and land fire still became a problem in Indonesia. Five major forest fire period was recorded, firstly, in 1982-1983 it was destroying of 3.2 million hectares and total economic loss reached 6 trillion rupiah. In 1987, 1991, 1994-1995 forest fire was destroying of 66,000 hectares, 500,000 Ha, and more than 5 million hectares respectively. Meanwhile in 1997-1998 it also caused an economic loss of around 2.7 billion[2].

In 2015, Indonesia was experiencing a huge forest and land fires. According to the publication released by World Bank in 2015, it is recorded that 2.6 million hectares of forests, peat lands and other land was destroyed by fire in 2015. The economic losses (including the losses caused by forest fire smog) in 2015 is estimated by the World Bank reached 16 billion USD or equivalent to 224 trillion rupiah. Moreover, the economic losses are also equivalent to 1.8% of Indonesia's GDP in 2015. This estimate includes the losses in agriculture, forestry, transport, trade, industry, tourism and other sectors. Most of the loss emerged due to direct damage and losses on crops, forestry, housing and infrastructure, as well as costs to handle the forest and peat land fires (World Bank, 2015, p.23-24).

Forest and land fire causes not only economic losses such as the loss of potential benefits of forest stands, but also ecologically, forest fires will reduce the number of forested area, air quality deterioration, and the loss of forest functions as a wildlife habitat, water management regulator, erosion and climate controller. In addition, the impact of the forest and peat land fires is also experienced not only inside, but also outside of the burned forest area. Even the impact of forest fires

[2] Sulistiowati, Diah. 2015. Kabut (Asap) Bikin Kalut. http://www.wwf.or.id/?40364/Kabut-Asap-Bikin-Kalut diakses pada 09/04/2016 pukul 08.15 WIB.

and smoke haze are becoming regional and global issue due to its impact which are able to cross national administrative border (transboundary haze pollution). Haze problem will have an impact on various aspects of life, ranging from health, transportation, trade, to the disruption of international relations, especially bilateral relations with countries that are exposed by the smog (Syaufina, 2014, p.35-39).

The air quality in surrounding areas of forest and peat land fires surpasses 1,000 point on the Pollutant Standards Index (PSI). This number has dangerous levels three times greater than normal condition. Toxins carried by the smoke causes respiratory problems, eye and skin disorders, and it is also dangerous particularly for infant's and elderly's health. Long-term impact on health has not been fully elucidated, but it is expected to be very significant. When smoke spreads, trading and schooling activities has to be stopped. Moreover, about 5 million students lost their learning time due to the school closure in 2015 (World Bank, 2015). In global level, forest and peatland fires even have become a major source of greenhouse gases emissions. World Bank (2015) recorded in October 2015 that emissions per day of forest fires in Indonesia exceeded the emissions of US economy, or more than 15.95 million tonnes of CO_2 emissions per day. According to Ministry of Environment and Forestry data in 2014, it was estimated that 44312.78 hectares of forest area was burned. Meantime, most of the forest and peat land fire occurred in conservation areas, with a total burned area of 18585.90 hectares (Ministry of Environment and Forestry, 2015, p.195). Series data regarding to the total burned area during the last five years can be seen through Table 4 below.

Table 4. Total Burned Area (Forest and Peat Land) in Indonesia 2010-2014

No	Year	Total Burned Area (Forest and Peat Land)
1	2010	3.500,12
2	2011	2.612,09
3	2012	9.606,53
4	2013	4.918,74
5	2014	32.761,36

Source: Ministry of Environment and Forestry (2015, p.195)

One of the causes why does forest management in Indonesia has not been implemented properly including forest fire controlling is the weak of forest governance. This emerges due to the absence of forest managers in site level who are responsible for managing forest area, so that most of the forest areas in Indonesia are open access and it may be utilized by unauthorized parties for their own interests. Furthermore, this condition causes the failure of forestry programs implementation (Directorate of Area Management and Preparation of Forest Area Utilization, 2011, p.18).

Beside the absence of government existence in site level, in order to achieve good governance in public sector, one of the important things should be considered is determining the interventions necessary to optimize the achievement of intended outcomes. In this aspect, to achieve sustainable outcomes, public sector entities need to plan interventions, such as services or regulation, appropriately. This means that establishing robust planning and control cycles covering their strategic and operational plans, priorities and targets, including risk management processes are imperative to ensure organizational target achievements. Regarding to this context, strategic planning is one of the mechanisms that must be conducted by public organizations (IFAC, 2013, p. 24-25).

Specifically, by adopting strategic planning, public organizations can achieve sustainable outcomes as mentioned before, by focusing on implementing

decisions now in order to position the organization favorably for the future (Bryson, 2011, p. 42). Strategic planning also can be used to help in organizing and managing effective organizational change processes, and figuring out what to change and how to response it (Bryson, 2011, p. 15).

In its origin, strategic planning was firstly used in businesses sector as a way to maintain or to improve their competitive advantages. Then, public sector adopted these practices to improve the effectiveness and efficiency of organizations similar to the private sector. Public organizations may have several difficulties in adopting strategic planning and management processes that were designed for private sector because public managers do not always account for differences in public and private organizations (Baile, 1998, p. 3).

Meanwhile, in Indonesia, national planning system has been regulated through Law No. 25/2004 regarding National Development Planning System. Based on the regulation article 3, verse (3), national development planning encompasses: (1) long range development plan; (2) middle range development plan and; (3) annual development plan. In addition, the regulation also mandates that strategic plan of ministry/agency must contain several aspects, namely vision, missions, strategies, policies, programs and development activities accordance with the main duties and the functions by using national middle range development plan (*RPJM Nasional*) as the guidance.

After the stipulation of Law No. 25/2004, the guidance to formulate national long range development plan, national middle range development plan and national annual development plan was enacted through Government Regulation No. 40/2006 regarding the Procedures of National Development Plan Arrangement. Then it was followed by the stipulation of Regulation of National

Development Planning Agency No.1/2014 regarding the Guidance of National Middle Range Development Plan (2015-2019) Arrangement and Ministerial Secretary Regulation of National Development Planning Agency No.3/2014 regarding Procedures of National Middle Range Development Plan (2015-2019) Arrangement.

Based on the development objectives, the main role of the Ministry of Environment and Forestry in 2015-2019, are: (1) Maintaining the environmental quality that provides carrying capacity, pollution controlling, watershed management, biodiversity and climate change controlling; (2) Maintaining forest area and its functions in order to sustain people's life, preparing forest for social activities, people's economy, and preserving the number and the types of flora and fauna as well as endangered species; (3) maintaining environmental quality, protecting the forest, and tending ecological balance and the existence of resources. Furthermore, to ensure the development role of Ministry of Environment and Forestry, so that strategic goals is formulated. This strategic objective will be a guidance and has a role in encouraging organizational performance in 2015-2019.

The strategic goals in environment and forestry development in 2015-2019 are: (1) Maintaining the environmental quality in order to improve the carrying capacity, water security and public health as well as performance indicators of Environmental Quality Index should be ranged between 66.5 to 68.6. The main elements of the index to be addressed are water, air and forest cover; (2) Utilizing the potential of forest resources and forest environment sustainably to improve economy and social welfare, with performance indicator is the improvement of forest and environmental resources contribution to foreign exchange and non-tax

revenues. Leveraging factors to be addressed are forest yields production, both timber and non-timber products (including plants and wildlife) and exports; (3) Preserving the ecological balance and biodiversity as well as the existence of natural resources as a life support system in order to prompt sustainable development, with performance indicators is functioning degree of ecosystem rises annually. This performance is an aggregation of various variables (such as declining trend of forest fires and the number of hotspot, increasing the number of endangered species population, the improvement of essential ecosystem area managed by the parties, reducing the consumption of ozone destructive materials, etc.).

In the Strategic Plan of 2015-2019, improvement of conservation and good forest governance has become a sub agenda of the national strategic plan of Ministry of Environment and Forestry. The target to be achieved, are divided into two main objectives (1) the conservation of forests and (2) forest governance. In terms of forest conservation, several things becoming the main concern are the increasing of 25 endangered species population (according to The IUCN Red List of Threatened Species) by 10 per cent according to baseline data in 2013; optimizing the management of conservation area (27.12 million ha), including the protection of karst area, peat land and mangrove; forest fires prevention and controlling is quickly and properly handled, as well as decreasing the number of hot spot; improving the quality of data and information regarding biodiversity. Meanwhile, policy direction is focused on the capacity building of conservation forest managers in order to protect and to preserve forest ecosystems, species and genetic resources.

In terms of forest governance, the main targets are to accomplish 100 percent of forest area stipulation/gazettement; accomplishment of forest area boundaries and functional boundaries plans (40,000 km); operationalization of 629 KPH/FMU consisting of 347 KPHP, 182 KPHL, 50 National Parks and 100 KPHK non-National Park (TN); and the increasing of community partnerships in forest management practice through the scheme of *Hutan Tanaman Rakyat* (HTR)/Community Forest Estate, *Hutan Kemasyarakatan* (HKM)/Social Forest and *Hutan Desa* (HD)/Village Forest, *Hutan Adat*/Indigenous Forest and *Hutan Rakyat* (HR)/Community Forest (from 500,000 ha in 2014 to 12.7 million ha in 2019). Meantime, policy directions are emphasized on the acceleration of forests legal status, improvement of data and information disclosure on forest resources, and governance improvement at the site level.

Despite the strategic planning in public sector in Indonesia has been fully supported by the regulations above, but the implementation is still far from ideal, particularly in term of forest and land fire prevention. Related to the constraints faced by public organizations, several things are rising up during the implementation of strategic planning, for instances alignment of the organizational culture with strategic planning, alignment of strategic plans with political authority, diversity and autonomy among the subunits of the public organizations, amount and consistency of support from the organization's leader, specification of performance measures and diversity and dispersion of stakeholders (Baile, 1998, p.120). In forest and land fire context, preventive aspect as an effective way to eradicate the number of forest and peat land fire occurrence in long term only take a little concern of policy makers. Cahyono, *et.al* (2015, p.111) asserts that forest fire controlling policies should be directed to the forest fire preventive efforts

compared with current policies which more emphasizes on forest fire extinction. Moreover, the change of mindset in forest and land fire controlling needs to be supported by socialization/advocacy, financial budget, human resources and equipments. Therefore, this study is imperative because it explores on how far strategic planning has been adopted by Directorate of Land and Forest Fire Control as a government institution that responsible for forest and land fire prevention in national level and it also explores strategic planning constraints conducted by Directorate in preventing forest and land fire and its techniques to overcome those difficulties.

1.2 Research Problems

Strategic planning is employed to make organizational mission and goals clearer. Bryson (1988, p.74) asserts that strategic planning is designed to assist public organizations in responding actively to the new situation. Moreover, even if public institutions acknowledge the salience strategic planning, but it does not mean that it is understood and used in a rational way (Hintea, 2008, p.55).

In tackling forest and land fire, various preventive strategies have been conducted by Directorate of Land and Forest Fire Control, for instances capacity building, institutional strengthening and the increasing of personnel number as well as the fulfillment of Manggala Agni facilities as a forest and land fire brigade, early detection through the official site (www.sipongi.menlhk.go.id) and the establishment of the Community Care Fire (MPA) as well as the establishment of pilot projects for Land Clearing Without Fire (*PLTB/Pembukaan Lahan Tanpa Bakar*). Besides, the government has provided technical guidance to forestry companies/permit holders (IUPHHK-HA/HT) and dissemination of information and enhancing awareness to prevent forest and land fires through campaigns and

counseling in various media as well as by utilizing leaflets, banners, banners, booklets, etc. (Minister of Forestry Regulation No.P.08 / Menhut-II / 2010).

In spite of those programs to prevent forest and land fires have been implemented, but fire occurrences still exist and their numbers are increasing. This may occur due to the lack of good forest governance practice in which the core problem lies on the implementation of strategic planning to achieve determined outcomes. Moreover, legal mandates and obligations often limit of public organization's autonomy and flexibility. By doing so, less choices are made or to be deleted in order to carry out actions to achieve goals. This constrains that limit spheres of action are important considerations for strategic managers in public organizations. (Nutt and Backoff, 1993, p. 216).

Meanwhile, empirical evidence related to the adoption of strategic planning in the public sector in order to support the critique that a strategic planning affects what an organization is, what it does and why it does it and also the exploration related to the strategic planning constraints and strategy alternatives are still limited. Therefore, this research is imperative due to the insight enhancement about the adoption of strategic planning in preventing forest and land fire in Indonesia conducted by Directorate of Land and Forest Fire Controlling as a public organization handling on national level policies. Besides, the research also will reveal some difficulties associated with strategic planning to enhance forest and land fire prevention and strategy alternative to prevent forest and land fire.

1.3 Research Questions

According to the background and research problem explained above, the research questions in this research, as follows:

1. How is the strategic planning adopted by the Directorate of Land and Forest Fire Controlling in preventing forest and land fires in Indonesia?
2. What are strategic planning difficulties faced by the Directorate of Land and Forest Fire Controlling to improve forest and land fires prevention?
3. What are strategy alternatives to prevent forest and land fire occurrences conducted by the Directorate of Land and Forest Fire Controlling?

1.4 Research Objectives

The research objectives of “Strategic Planning to Prevent Forest and Land Fire in Indonesia” are:

1. To explore about how strategic planning is adopted by the Directorate of Land and Forest Fires Controlling to prevent forest and land fires in Indonesia.
2. To explore about strategic planning difficulties faced by the Directorate of Land and Forest Fire Controlling to improve forest and land fires prevention.
3. To describe strategy alternatives in preventing forest and peat land fire occurrences conducted by the Directorate of Land and Forest Fire Controlling.

1.5 Research Benefits

It is hoped that the research will contribute and give benefits for several stakeholders. Theoretically, it is expected this study may have role to provide the existing strategic planning literatures to the targeted stakeholders that are particularly coming from scholars. Practically, the targeted stakeholders are from central government as a consideration materials in issuing the policy related to the forest and land fire management. Also, this research is expected to be beneficial for other institutions interested in studying this topic. Benefits of the research are:

a. Scholars.

   This study is expected to contribute positively to the literatures of strategic planning in public sector and forest fire management.

b. Government.

   This research may have contribution for government (both central and local governments) to provide data and information related to the use of strategic planning in preventing forest and land fire occurrences.